

REMARKS

Favorable reconsideration of the claims pending within this application is respectfully requested.

Claims 1-25 are pending within this application. No claims have been allowed.

Claims 1-9, 13-16 and 18-23 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Tadashi (JP 09-064323).

With respect to the foregoing obviousness rejection citing Tadashi, applicant observes that each of claims 1, 23 and 24 recites “an oxygen dose of about 1E16 to about 5E16” for fabricating a silicon-on-insulator (SOI) substrate. In comparison, Tadashi at paragraph 0004 teaches an analogous oxygen dose of 1E18 atoms per square centimeter.

In a first instance, 1E18 atoms per square centimeter oxygen dose is greater than the newly claimed oxygen dose recited by applicant in each of claim 1, claim 23 and claim 24. For that reason, applicant further asserts that claim 1, claim 23 and claim 24 may not properly be rejected under 35 U.S.C. § 103(a) as unpatentable over Tadashi. Due to their dependence upon claim 1 or claim 24, applicant further asserts that the remaining claims in the foregoing rejections may also not properly be rejected under 35 U.S.C. § 103(a) as unpatentable over Tadashi.

In a second instance, applicant notes that the Examiner apparently nonetheless asserts that the difference between applicant’s claimed oxygen dose and Tadashi’s disclosed oxygen dose is indistinguishable within the context of routine experimentation. As may have been noted at least in part by the Examiner, Tadashi optimizes the oxygen dose within the context of silicon oxide to silicon stress minimization, while applicant optimizes the oxygen dose within the context of fabricating a minimally thin buried oxide layer. Since Tadashi’s oxygen dose and applicant’s oxygen dose are selected within the context of optimization of different result effective variables

(i.e., stress minimization (paragraph 0009) in comparison with buried oxide layer thickness minimization (paragraph 0008)) that optimize at different values that do not overlap, applicant asserts that the difference between applicant's claimed oxygen dose and Tadashi's disclosed oxygen dose is clearly distinguishable, and does not result from routine experimentation, but rather non-routine experimentation.

In light of the foregoing response, applicant respectfully requests that the Examiner's rejections of claims 1-9, 13-16 and 18-23 under 35 U.S.C. § 103(a) as allegedly unpatentable over Tadashi be withdrawn.

Claims 1-15 and 18-25 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Houston et al. (U.S. Patent No. 2002/0086463; hereinafter "Houston").

Applicant observes that the Examiner acknowledges that Houston does not teach the thickness of a buried oxide layer, nor particular ion implantation parameters used when forming the buried oxide layer. Nonetheless, the Examiner asserts that insofar as suggestive thicknesses for Houston's porous layer are in the nanometer range, Houston implicitly teaches a similar thickness for the buried oxide layer.

Whether or not Houston teaches a similar thickness to applicant's buried oxide layer, applicant has newly amended claim 1, claim 23 and claim 24 to provide that applicant's ion implantation dose is from about $1\text{E}16.5$ to about $5\text{E}16$ oxygen ions per square centimeter. Applicant has also canceled claim 12. Support for this limitation newly incorporated into claim 1, claim 23 and claim 24 is found within applicant's specification at paragraph 0038. In comparison, Houston at paragraph 0020 teaches an oxygen ion implantation dose from about $1\text{E}17$ to $1\text{E}18$ oxygen ions per square centimeter. Since Houston does not teach applicant's claimed oxygen ion implantation dosage, applicant asserts that claim 1, claim 23 and claim 24

may not properly be rejected under 35 U.S.C. §103(a) as being unpatentable over Houston.

In light of the foregoing response, applicant respectfully requests that the Examiner's rejections of claims 1-15 and 18-25 under 35 U.S.C. § 103(a) as allegedly unpatentable over Houston, be withdrawn.

Claims 1-25 stand rejected under 35 U.S.C. § 102(e) as allegedly anticipated by Bendernagel et al. (U.S. Patent No. 6,800,518; hereinafter "Bendernagel").

The Examiner has suggested that the foregoing rejection might be overcome with an appropriate showing under 37 C.F.R. § 1.131. To that end, an appropriate declaration under 37 C.F.R. § 1.131 that is properly executed, is now appended.

Claims 1 and 12-22 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Sadana et al. (U.S. Patent No. 6,930,643; hereinafter "Sadana").

Claim 1 and 12-22 alternatively stand rejected under 35 U.S.C. § 102(e) as allegedly anticipated by Norcott et al. (U.S. Patent No. 6,486,037; hereinafter "Norcott") which is the child of Sadana, and contains essentially the same teachings.

Applicant observes that the Examiner asserts that Sadana's (or Norcott's) initial ion implanting with oxygen provides a region of vacancies or voids in a semiconductor structure, in accordance with applicant's claim 1, claim 23 and claim 24. In response in a first instance, with the Examiner's assertion applicant respectfully disagrees insofar as applicant asserts that a person of ordinary skill in the art would understand that oxygen ion implanting into a semiconductor substrate does not expressly or inherently cause the formation of a porous region with the semiconductor substrate, but rather such ion implantation may provide for amorphization of a semiconductor substrate.

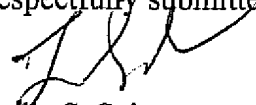
Nonetheless, applicant has amended claim 1, claim 23 and claim 24 to recite that

applicant's Si-containing substrate has a porous region of vacancies or voids. Support for this limitation newly incorporated into claim 1, claim 23 and claim 24 is found within applicant's specification at paragraph 0015. Further aspects of such porosity are recited in claim 7. Since Sadana and Norcott appear silent regarding porosity of a Si-containing substrate incident to ion implantation, and further since applicant asserts that a person skilled in the art would understand that ion implantation would not necessarily provide a porous Si-containing substrate, applicant asserts that claim 1, claim 23 and claim 24, and the remaining claims dependent thereupon within this application, may not properly be rejected under 35 U.S.C. 102(b) as being anticipated by Sadana, or under 35 U.S.C. 102(e) as being anticipated by Norcott.

In light of the foregoing response, applicant respectfully requests that the Examiner's rejections of: (1) claims 1 and 12-22 under 35 U.S.C. § 102(b) as allegedly anticipated by Sadana; and (2) claims 1 and 12-22 under 35 U.S.C. § 102(e) as allegedly anticipated by Norcott, be withdrawn.

In light of the foregoing remarks, applicant respectfully requests reconsideration of, and early allowance of, the claims pending within this application.

Respectfully submitted,



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